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ABSTRACT

This essay examines the future directions of university education in Europe, focusing on technology and the information revolution as the driving forces behind educational change. Whereas the mission of universities in the past was to accumulate, refine, and pass on knowledge, their new task is to educate and train people to manage and gain access to the universal data base of knowledge. Universities need to offer more options to their students, encourage broad rather than specialized education at the undergraduate level, and utilize new teaching methods, such as distance learning via interactive computer connection, to keep abreast of the explosion of knowledge and the rapid changes that societies are undergoing. The pioneering work of the British Open University in the use of distance learning and computer technology are discussed. The debate over student choice and intellectual property rights is also examined. (MDM)

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Professor Sir Graham HILLS

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FOREWORD

The European scene of the 1980's and 1990's has undergone substantial mutations, as compared to that of the previous decades, triggered by wide-ranging political, economic, and social changes in all the countries of the Europe Region. Confronted with new challenges and demands, higher education institutions have had to re-evaluate and to diversify their education, research, and public service functions. Aware of the ongoing trends and developments in higher education, decision-makers, academics, and researchers have become involved in a process of reappraisal of and reflection on the mission and role of the university in the coming decades. The reforms launched in almost all European countries have helped universities to reorient themselves in order to better cope with the fast changing environment and social needs.

In an attempt to contribute to bringing to the fore the topics of immediate concern resulting from this process, for the international academic community, CEPES has sought to commission distinguished scholars to elaborate essays focussed on major themes and to publish them in its series *CEPES Papers on Higher Education* thus contributing to the general reflection on education for the 21st century.

CEPES is proud to present the first volume in this endeavour, an essay by Professor Sir Graham Hills of the United Kingdom, who discusses the profound effects on universities of computerization and of the new information and communication technologies, on the one hand, and the "emergence of student choice as a driving force for change", on the other.

Other volumes on this general subject are in preparation.

Lazăr Vlăsceanu

PREFACE

This study was written at the invitation of CEPES. It follows a meeting held in Bucharest 1993 at which representatives of most of the European countries, East and West, discussed the probable future of their national systems of higher education. The discussion ranged over issues such as culture, history, technology, and funding. All those present were agreed that the future is likely to owe surprisingly little to a past rooted in religious foundations, the sanctity of knowledge, and the dependent status of students. The advent of mass higher education seems more likely to bring forth new needs, new structures, and therefore, new practices. Whether the older universities will be able to tolerate or withstand the pace of change implied remains a significant challenge for them.

There is an anecdote which asks the question "Which national institutions have remained unchanged from medieval time to be present day?" The answer is that all but two of the institutions are universities. The two exceptions are said to be the Roman Catholic-Orthodox Church and the Icelandic Parliament; everything else, including the banks, factories, national armies and navies, law courts and political parties, being of recent origin. The story is told to emphasize the unchanging nature of universities. As an international brotherhood of scholars, they have been remarkably resilient and resistant to change. Anyone seeking to reform them is, therefore, brave, foolhardy, and likely to fail.

This article nevertheless sets out a new prospectus for several aspects of the universities of the future which, to survive, need to be responsive to the societies they serve. Since those societies are themselves undergoing traumatic change, it seems likely that the successful universities will be those that are able easily to adapt without losing sight of their abiding ideals and responsibilities.

INTRODUCTION

Although universities are among the most resilient and conservative of institutions, they will not escape the changes driven on by the new technologies. If they are to stay in touch with the societies that support them, they will need to keep pace with societal changes, most of them profound. The onset of mass higher education, for example, will increase the trend towards mechanization, and such trends need to be understood and managed if they are not to be overwhelming.

This article considers aspects of undergraduate education which have either already been subject to massive changes or seem likely soon to encounter them. The list of topics is not exhaustive, but taken together, they cover a large area of university activity. The views expressed here will challenge the traditional ways of teaching and of learning, of organizing knowledge, and of balancing education with training. The emergence of student choice as a driving force for change leads on to proposals for elevating the status of students to that of valued customer. The question of *who pays whom for what* leads to conclusions that the role of government should be restricted to that of an arms-length paymaster.

The biggest challenge will be to staff educated and trained for the older didactic methods of teaching which, before their eyes, are giving way to computer-assisted open learning. Their vested interest in past practices is likely to be the most serious obstacle to change and to the further flourishing of the universities.

Chapter 1

THE *KNOW-WHAT* AND THE *KNOW-HOW*

The driving force behind all the changes being forced onto higher education is technology. The latter has raised life expectancy, material well-being, and individual aspirations to unimagined levels which can only be sustained by further new technologies. It is a challenge we must understand and control if it is not to subjugate the world and diminish its human spirit, that is to control us. The same technologies have entered the field of education, and already the book begins to decline in importance as the interactive computer, with its compact video discs, shows itself to be a superior vehicle for the transmission of facts, knowledge, ideas, and, above all else, images.

Put another way, it seems that the knowledge society has passed its apogee. Where once the *raison d'être* of universities and colleges was to accumulate, refine, and pass on knowledge, as well as culture expressed in words as knowledge, their new task is to educate and train people to manage and to gain access to the universal data base of knowledge, whenever and wherever they need to do so. The knowledge base itself has recently grown explosively and continues so to do. The shelf-life of many segments of the spectrum of knowledge is now short and hardly the basis of lifelong employment. The computer memory is infinite compared to its human forebear, and we should come to terms with that fact.

In this context, it is helpful to clarify the terminology by separing the components of education and training as in Figures 1 and 2. These definitions are essential for the proper understanding of the processes of education such as didactic teaching, self-paced learning, tutoring, research and development and, not least, of what can be owned intellectually and what cannot.

Figure 1. **The Main Components of Education at All Levels**

THE KNOWLEDGE BASE

- The know-what.

  The facts, the books, the blueprints, and the theories.

  Once largely in the brain, these are now largely in the computer memory.

THE SKILLS BASE

- The how-to-do.

  Techniques, practice and experiment.

  The human domain of the senses, the arts, the crafts of design and make.

THE TECHNOLOGY BASE

- The know-how.

  The application of knowledge by the use of skills to create objects and to solve problems.

Figure 2. **The Dynamic Components of Education**

	The creation of new knowledge
KNOWLEDGE	The transfer, storage, accessing, and repacking of existing knowledge.
	The creation of new skills.
SKILLS	The transfer of existing skills and the acquisition of new skills.
	The creation of new technology by the application of new knowledge or new skills.
TECHNOLOGY	The transfer of existing or new technology to new circumstances.

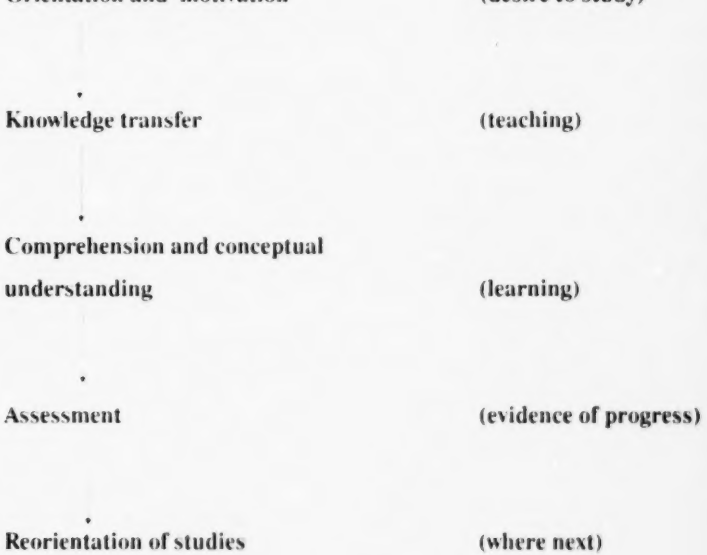
Until the last quarter of this century, education, especially university education, was synonymous with knowledge expressed as words, its acquisition, its retention (in the head), its regurgitation (always for examination purposes), its purposes), its creation (the justification of research no matter how esoteric), and its storage in the form of books (the veneration of the library). The *know-what* was considered an essential feature of the educated person in the way that the *know-how* certainly was not. As a result, the acquiring of skills, without which the *know-what* cannot become the *know-how*, was of relatively little importance. Legal skills, medical skills, dental skills, rhetorical skills, and language skills, to name just a few, were somehow captured by the knowledge fraternity, but in twenty years or less, Europe has come to accept the greater importance of all kinds of skills, the dominant skill being that of computing.

There is an urgent need for universities to adapt to these ideas and to the changes they imply. Some are already doing so, becoming more effective, more efficient, and more attractive in the process. The main body of universities, that is the university *establishment*, will tend to resist such radical changes, but for most universities, it will be change or perish. The students are alive to the changes and to the advantages and power that confer on the individual. They offer choices in subject material, in time frames, in spatial orientation, and in costs, all irresistible to our consumer society. It will be for the modern university to shape the options, to package and repackage them for a wide variety of purposes including its own.

New educational technology itself will have a profound influence on the modern university. The habits of the scriptorum, essentially that of the students writing down the words of the professor, will not survive in competition with the more attractive methods of displaying text, equations, diagrams, and images now readily available to anyone with a disc-driven personal computer. Of all the duties of the professor which are now challenged by the new technologies, it is his or her traditional role as a didactic teacher which will be the first to be abandoned. On the other hand, the professor's role as guide, tutor, mentor, and friend can only be enhanced by being freed from the chores of rote teaching and rote learning.

Thus, if the purpose of education is to learn how to learn, then that process can be seen to comprise several separate steps. As shown in Figure 3, the principal steps in achieving a thorough understanding of any subject is the sequence of desiring to do so (motivation and inspiration), the organization and absorption of the knowledge base of that subject segment, the comprehension of the subject in its concepts and its context (tutorial, person-to-person studies), the independent assessment of that comprehension (by *viva-voce* or written examination) and the awareness of where this new state of knowledge leads (re-orientation).

Figure 3. **A Virtuous Cycle of Teaching and Learning**



It is certainly the author's experience that the comprehension engendered by tutorial studies, by rhetorical argument, by case studies, by formal presentation, by project work and team effort is the area of activities most enriched by staff participation and the one most generally neglected. Figure 4 shows a matrix of these essential stages of learning and the various technologies that can be used to carry them out. Including the live teacher as one of those technologies, it is easily argued that particular technology is the least effective way of transferring knowledge of all kinds*.

The fact is that every day, hundreds (sometimes thousands) of students still cram into lecture theatres and auditoria to copy down the words of a distant professor and regard his activity as the main basis of their education. It is a sad reflection not only of shortage of resources but of the slowness of the academic establishment to appreciate that knowledge transfer and knowledge accumulation are a less important aspect of the student's experience than acquiring the skills of learning, of understanding, and of presentation, none of which can be acquired in the lecture hall.

One of the most important responsibilities of the university of tomorrow will therefore be to redress the balance between knowledge and skill, especially intellectual skills. Knowledge can be fleeting and easily outdated, whereas the skills gaining access to its repacking it, and knowing how to use it are lifelong abilities. Among the new general skills of the educated citizen will be those of computation, keyboarding, simulation, analysis, mathematics, management, finance legal, understanding, social adeptness, and, of course, good behaviour. The best advice given to students is to remind them that whereas they will obtain their first appointments on the basis of their academic qualifications, they will lose their latest appointments because of their personalities. Skills, especially social skills, are therefore very important.

* Both these figures are taken from a report (1992) by Richard Hooper, advisor to the University of Highlands and Islands Project (Highlands and Islands Enterprise, Inverness, Scotland).

Chapter 2

THE ORGANIZATION OF KNOWLEDGE

For many hundreds of years, the undergraduate student would expect to be required to master a range of subjects as laid down by the professors of the university. The entire course would have been prescribed, and success would be measured by written or oral examinations set by the same professors. This was not a matter for negotiation but rather one of take it or leave it.

The knowledge content of the courses would be at the discretion of the professors, and the same subjects might be taught in different universities with quite different emphases. For much of the time, the nature of the knowledge would have less importance than the development of habits of mind as the result of discussions and arguments with the professors. The Nineteenth and Twentieth centuries changes that. Under the stimulus of scientific discovery, the range of subjects, the volume of knowledge, and the number of students increased greatly. The result was the system we know today which is largely knowledge based, which places great emphasis on knowledge content, and which required that the knowledge itself be standardized and uniformly acceptable.

The mechanism of knowledge and knowledge transfer took the form of books, even if many universities continued to teach as though the printing press had not been invented. Coherence of knowledge was assumed to be guaranteed by restricting its range to smaller and smaller fragments of the knowledge base. By the early 1800's, the polymath was no longer well regarded; the specialist was everywhere welcome; and the aim of knowing more and more about less and less was near achievement. These arrangements suited the educational providers, *i.e.*, the professors. It was a convenient basis for their increasingly important research interests (on which their career prospects depended). Universities became more and more academically inclined. The word *academic* became synonymous with *unreal*, and the gap between the *know-what* and *know-how* became alarming.

Figure 4. **The Matching of Technologies to the Separate Functions**

Funtion Technology	Orientation and motivation	Knowledge transfer	Comprehension and conceptual understanding	Assessment	Reorientation
Live Teacher in Lecture Theatre		X			
Laboratory	X				X
Tutorial with Teacher and Peers					
Books and other printed matter			X		X
Audio, video tapes, and discs			X	X	X
Off-line interactive personal computer					X
On-line conferencing computer/ audio	X	X		X	

It took the less academic institutions, such as the polytechnics, to realize that this form of higher education was on a path of diminishing returns, that self-fulfilling prophecies were a poor basis for coping with the demands of the real world driven by emerging technologies which owed relatively little to knowledge or academic expertise. The result has been a revolution in attitudes towards knowledge and how it can best be organized for educational purposes.

The agents of change have been the typewriter, the word processor, the copying machine, film and video recorders, the personal computer, and the storage on disc of words, symbols, images, and sound. A generation of students has appeared entirely at ease with the computer and all its manifestations. They expect to receive and return information in a variety of electronic formats and, when appropriate, over long distances. They are less inclined to go to knowledge but rather to have it brought to them.

The pioneers in this kind of thinking included the Open University in The United Kingdom still catering largely to adult students, but also the lesser academic institutions committed to training as well as to education and, of course, the manufacturers of the new equipment. But it was the universal desire to increase flexibility and to reduce rigidities as part of the trend to satisfy the customers rather than the providers which led to the break up of the older systems of prescribed courses. The need to accommodate new subjects and new subject combinations required that the rigid demarcations between existing subjects be disregarded. The process of the disintegration of knowledge was about to be reversed by dividing existing subjects into smaller, coherent subsets (modules) and then allowing them to be recombined into new subjects. Whole courses were readily divided into modules which could be separately examined and separately credited. The degree then became an integrating process of credit accumulation. Credits themselves could be transferred and the doors opened to a user-friendly system of higher education, almost infinitely flexible in content, time, and space.

There were many critics of this development. They lamented what they saw as a lack of the coherence, depth, and volume deemed to be essential for scholarship. They failed to appreciate that the new flexibility not only allowed new subject combinations but, equally well, old subject combinations. At heart, they resented the freedom of choice now available to students. They saw it as a threat to their settled way of life. In that respect they were, of course, right.

The flexibility was not confined to the separate institutions. Credits could not only be transferred within institutions but between them. Almost

immediately, the older concept of the wandering scholar was resurrected in the ERASMUS scheme for student transfer within Europe. This programme has been a great success and needs to be extended to its limits.

As noted above, the availability of a myriad of independent course units opened the door to a variety of undergraduate experiences. New, unheard-of-subject combinations were possible. Although most students would be guided into what their tutors and mentors would regard as sensible combinations - computer science for mathematics, mathematics for chemistry, chemistry for medicine, and so on; others would be more adventuresome and take less obvious combinations such as music with philosophy and mathematics. The door was thus opened to a range of general degrees, once the pride of the Scottish system of higher education and still the pride of the Liberal Arts universities in the United States. In brief, the tide towards specialization has been checked, and as more and more early specialization is seen as a path to early obsolescence, then more students are likely to build broader platforms on which to build their uncertain futures.

The variety of academic pathways and the flexibility of following them to suit individual circumstances has led to yet another option for intending undergraduates. They can not only choose widely what kind of courses they wish to follow but also the mode in which they follow it. They may wish to pursue a conventional mixture of lectures, tutorials and, where appropriate, laboratory practice. On the other hand, they may wish to follow an individual pattern of learning, using recorded material through a computer workstation and thereby largely teaching themselves. This extreme form of individualized learning is called open learning. It is the way of the Open University and is possibly more suited to mature students than to fresh, young undergraduates. Even so, many colleges and universities already have large numbers of open-learning laboratories, available sometimes for 24 hours a day. They are popular and effective and not only for part-time students. The corporate, social life of such open-learning students need be no less than that of conventional students, and it is argued that open learning fits the life styles of many students just as well as it accommodates their particular styles and habits of learning. In the short space of 20 years, the possible ways of organizing knowledge and the

learning experience have multiplied to produce a range of options and a degree of flexibility well suited to the variety of choice and life styles found outside the university. It is likely that student choice, guided by teachers, parents and friends, will be the surest indication of what should be taught and how it should be learned. Conservative academies will no doubt continue to argue the virtues of the present arrangements. They may do so on grounds of soundness and tradition. More likely it will be on grounds of sloth and fear of the future. Their views are therefore unlikely to prevail.

Chapter 3

THE CONTENT OF EDUCATION AND TRAINING

In the nomenclature of the European Union statements concerning education, it is a surprise, albeit a pleasant one, to find that education is a sub-set of training. Reference was made earlier to the changes in the balance between the acquisition of knowledge and the acquisition of skills. Evidently the European Union values skills highly and sees training and re-skilling as the essential element in the maintenance or restoration of the competitive edge of European industry. The high regard for skills shown by Japan, Germany, and the United States is held to be a key factor in their manufacturing achievements.

There are therefore many who now wish to see the division between knowledge and skills, that is between education and training, to be blurred. Whenever possible, it is argued, education and training should go hand in hand, not just as they once did in experimental subjects such as chemistry and physics, but rather as independent partners of equivalent value. Thus all students, even those in the humanities, would be expected to be computer literate, perhaps even technology literate. At the same time, scientists and technologists might develop their design skills, their literary skills, and the citizenship skills of finance, ethics, and rethoric.

In broad terms, if one of the main purposes of education is to stimulate the imagination, then the purpose of training is to acquire the intellectual tool-kit to exploit that imagination. The application of knowledge will normally and inevitably involve a subconscious fusion of both knowledge and skills, and that is how it should be. Some will still wish to acquire knowledge or skills for their own sake, but they will be a minority.

Skills fall easily into two groups, one being the general so-called enabling technologies that most people will find useful and the other special skills attached to a discipline, a profession, or to employment.

Those of the second category are best learned in the work place, that is, on the job. They will therefore be acquired after the period of undergraduate education and training. The same will be true of specialized knowledge. The special knowledge base of lawyers or accountants, for example, might well be best acquired in professional practice. The acquisition of the general, enabling technologies would then be a main feature of the undergraduate course.

This analysis of what might be done falls far short of what is actually done. In the United Kingdom, for example, most undergraduates already follow specialized courses which bring them into contact with sophisticated skills and knowledge bases at an early age. This early specialization even reaches down into schools and has been a target for criticism by many reforming educationalists. They would argue that the acquisition of the complementary skills, which could take place after the formal education process, in actuality never does and that such early specialization leaves the specialist to develop his or her life on too narrow a basis.

This argument is made in favour of the generalized first degree course widely followed in the United States. Such courses were once also the pattern in Scotland where the unclassified generalized first degree is still well regarded. However, it has now been largely superseded by the English practice of highly specialized and highly classified (1st, 2nd, 3rd class honours, etc.) degree courses justified because they produce graduates more rapidly, and therefore more cheaply, and also because that is the way the United Kingdom believes that it has excelled. Then, there is also a growing body of opinion that, for most, early specialization is a *cul de sac*, a *dead end*, not necessarily harmful, but likely to be so for other than a dedicated few.

As a basis for mass higher education it is surely mistaken. Whereas early specialization often invites disappointment for the many involving a considerable waste of effort and resources, its delay by means of a general first degree seems likely to offer a better basis for everyone's future, including that of the dedicated academic. Intellectual mobility is already looked for in every career and by almost every industry. Not to prepare

students and graduates for that eventuality seems to be a costly error, the main cost being borne by the students.

The content of education therefore needs to be pyramidal in shape, being initially broadly based and ending in one or more high points of specialization, invariably for professional purposes. Such general first degrees are likely to be attractive for many would-be students, and it is easily argued that mass higher education is not possible on any other basis. The more specialized, more expensive education and training, for example, for nuclear physics or for medicine, can then better be offered to those mature enough to be sure of their special interests. This second phase might most easily be carried on in a graduate school by expert professionals, some of them in industry and business.

The first, general phase has been called *Learning for life*, meaning the preparation for a subsequent process of life-long learning which will ensue for most professional, business, and industrial employees. Both phases would involve a blend of knowledge-based learning and skills-based training. It may be that special skills will dominate the second phase. That being so, it would be desirable for the first degree to offer a wide range of enabling skills and conceptual knowledge on which a variety of specialisms could be built.

No attempt has been made in this chapter to discuss other divides, for instance, that between science and the arts, technology, and the humanities, or the useful and the useless. This matter is societal, not readily subject to prescription. It is both a personal matter of individual taste and a cultural matter determined by fashion and circumstances. There is no reason to suppose that universities, governments, or industry are anymore able to decide these matters than individuals and their families. It does, however, seem likely that the fragmentation of knowledge and the consequential subject specialization opens up many possibilities for taking an extreme position on one side or another of this cultural divide. Thus, those required to study mathematics, physics, and chemistry at an early age may well remain stunted in their attitudes to the arts. The reverse position is even worse, for whilst the professional scientist is likely to cultivate his or her musical, literary, and artistic talents, it is quite certain that those committed to the arts at an early age will for ever turn their

backs on science and technology. The general first degree seems to be a remedy for this disease.

Within the domain of these broad cultural questions, it may be worthwhile revisiting the separate traditions of university life and purpose which began or changed during the Nineteenth century.*

The Humboldt model of powerful scholarship bolstered by research is clearly an uncomfortable intruder into mass higher education. All the great things that this model stands for might therefore be best accommodated in graduate schools attached to departments of the larger universities. The American model of the socially responsive industrially helpful university looks more attractive and in keeping with our times. It too would seem to be at its best at the postgraduate level and therefore to be compatible with the initially general education promoted here. The Oxford or Newman model with the personality and character of the student at the centre of its purpose is also increasingly attractive as education's response to an increasingly technological world. It would need, however, to operate across a much wider range of subject matter and not to despise the applied sciences, the social sciences, and the crafts.

Only the Napoleonic model of the-government-knows-best seems truly out of step. All organizations are busily devolving responsibility as far as effectiveness will allow. In rapidly changing times, government thinking is likely to be at best late and at worst absent. The rigidity of all such systems seems at odds with the flexible processes and the wide range of student choice which is now being sought. It will be argued below that student choice is the best guarantee of the continued evolution of the universities and ultimately their protection against coercion by government, industry, and other pressure groups. In its simplest form, the Napoleonic model must take a back seat, at least for the time being. It may disappear as the nation states fade away.

* This analysis is taken from the paper presented at the September 1993 Bucharest meeting of CEPES by Professor Roeland J. In't Veld of the Erasmus University, Rotterdam, The Netherlands.

Chapter 4

INTELLECTUAL PROPERTY: THE OWNERSHIP OF KNOWLEDGE

There is in most institutions a strong presumption of ownership. People belong to their companies and have loyalty and obligations towards them. The people may own their tools and will certainly believe they own their knowledge and their skills. Most universities are self-contained and even self-sufficient, supplying all their course materials, their knowledge base, and every other educational support out of their own resources. Professors are appointed largely because of these acquired knowledge bases which they therefore seem to own. This view is reinforced by the fact that some new knowledge, for example, the formula of a new chemical compound, can be patented and thereby become intellectual property, sometimes very valuable property.

This situation, however, is the exception rather than the rule. Much of the knowledge base is free and universally accessible. It is owned by everybody and therefore by nobody. This fact becomes increasingly more evident as the knowledge is committed to paper or is recorded in some other way. At a philosophical level, knowledge cannot be owned. Once it is in the public domain, everybody has access to it. In that sense, a secret is valueless.

However, the format in which the knowledge is reproduced can be owned, and this is the sphere of copyright. A person's book or a programme maker's video is protected in this way and a fee is normally charged for exploiting them for commercial ends. But a new assembly of information, that is a repacking of the knowledge base, belongs to the person doing these things. This principle holds especially true if the new knowledge is used, as in a lecture or tutorial or as notes not reproduced for sale.

These aspects matter because many undergraduate courses or course modules are now available for reproduction and or franchising. Open University material falls within this category, and it offers its notes, booklets, tapes, and other teaching material on clearly stated financial terms. This practice would seem to be the trend, and we must soon expect a new educational industry offering lectures, short courses, and whole course modules in attractive formats, for instance in interactive CD-ROM. It is likely than as the market for these products develops, the process of standardization will push up the quality to the point when, like with motor cars or microelectronics, only the market leaders survive.

This scenario has not yet been reached but it raises the fundamental question for universities: "Do we make or do we buy?" A general rule exists that what can be bought should never be made. Certainly few universities will want to go to the expense and effort of making their own CD-ROM presentations for use by a few hundred customers. We can therefore look forward to the time when the knowledge base of most if not all courses will be available in high quality standardized computer-read form suitable for both open learning and use in lecture, seminar, and tutorial rooms.

At the graduate level of high expertise, this situation may never be reached, the market being too specialized and too small. But at the undergraduate level, chemistry is chemistry wherever it is met. No one will be interested in the second best, and all students will be taught from the very best. But who will teach them? Will it be the same professors who would have taught the conventional material anyway? That seems unlikely. In Oxford where the tutorial method is widely used, it is the tutors rather than the professors who work closely with individual students or with small groups of them.

It follows that more staff will be appointed for their tutorial, pastoral skills than for their subject expertise, especially so for the early years of a general first degree course. Those following open-learning courses no longer expect the expert to be on hand all of the time. Their accumulated difficulties can often be despatched by telephone or by a short meeting.

In the Open University, the ratio of teachers/professors to tutors is already small. Given the cost of full-time specialized staff and their research aspirations, it as arguable whether all universities will be able to afford or would want to retain the full-time services of the whole range of specialists. More and more in industry as a whole, companies seek to own, that is to contract to full-time employment, only their core staff. All services which can be bought are acquired by hiring part-time staff, staff on short-term contracts, consultants, or simply sub-contractors.

It may be that these practices will spread to higher education. If the choice is between a part-time Einstein or a full-time lesser mortal, some institutions might prefer the Einstein, especially if his teaching and administrative skills were less than adequate.

At the present time, staff in British universities effectively have appointments for life. The expectation that they will remain active, expert teachers and researchers for their entire lives is unlikely to be fulfilled. If more flexible arrangements cannot be found, then the university system will suffer. If we are agreed that the education of undergraduates is not for life but only a preparation for life, how much more so might that be for their academic leaders.

Chapter 5

STUDENT CHOICE AND ACADEMIC EVOLUTION

It is one thing to know and to accept the new options open to universities but entirely another when it comes to the implementation of the options and choices between them. As we have noted already, universities and unusually conservative societies, highly resistant to change and well able to argue the case for the *status quo*. The resistance, often proffered on highly intelligent and intellectual terms, is invariably something baser, namely the desire to avoid the effort of discarding the old and building the new. To challenge arrangements and mind-sets hallowed by centuries is a big undertaking.

It follows that if universities are to evolve at a pace commensurate with societal change, then ways will need to be found to bypass the modes and places wherein resistance is championed. In addition to individual professors and other academics, collective bodies such as faculties, senates, boards of studies, and examination authorities are all likely to feel threatened by the proposed changes in organization, methods, and subject content. Much of their resistance will be of the theological variety , *i.e.*, not open to rational argument.

The same is true of other aspects of society, and actual change is invariably driven by customer choice. Options apparently equal to the vendor look different to the customer, and it is likely that change will only occur at a finite rate in universities if driven on by the pressure of student choice. That does not mean that student will run the universities anymore than airline passengers run the airlines, but their vision and their choices for their futures are most likely to accelerate the rejection of the old and its replacement by the new.

In most universities these options do not exist. For centuries the student's role has not been that of a customer but rather that of a

supplicant. The option for all students was to *take it or leave it*, that is, to accept what was on offer or to go somewhere else, generally an impossible alternative. They had no negotiating position because, of course, they were dependent on their universities for every aspect of their well being, not the least of which was the award of their degrees.

As yet another thrust into the future, the radical proposal is being made that the financial support by government of public universities be channelled through the students allowing them to purchase their education at the university of their choice provided only that it will enroll them into undergraduate status. In other words, the money budgeted by the state to meet the cost of higher education should be used to provide a large number of scholarships or bursaries so that each and every student enrolled by a university would be enabled to meet the cost, that is, to pay the fees of his or her tuition throughout their first degree course, whether it lasts for 3, 4, or 5 years. We are concerned here only with tuition fees, not the cost of maintenance which is a separate matter. There would be no restriction on the choices that the students could make. The only limitation would be the range of courses available which might be implicitly constrained by professional restrictions, but one would hope not too much.

Students would be free to change courses or to change universities, and it would be this *empowerment* (a word now much in vogue) of the students which would compel a tide of change in nature and content of undergraduate courses. It is not to be supposed that the consequential changes would be sudden or revolutionary. Many students are conservative and satisfied with what they see as their only path to success. In any case, the commitments of universities to existing courses could not be instantly set aside. Nevertheless, first the newer universities and then the other competing universities would soon begin to offer new courses which they deem to be more attractive, and thus the process of change and evolution would be stimulated and accelerated.

This empowerment of the students, by entitling them to choice, can be argued as desirable in its own right, that is, as a further entitlement of citizenship. In the context of the universities, it takes on new force because it is the only reliable foundation of quality of provision. In every other

business, the search for quality of service, in the jargon of the day, TQM, total quality management, begins with the identification of the customer and ends with that customer's satisfaction. There is no reason to suppose that universities should be excluded from these considerations. It is a basic tenet of economics, and remarkably like common sense, that whilst it can sometimes be beneficial to subsidize the customer, it is never so to subsidize the supplier.

Almost all of the educational, economic, and management inefficiency of the universities can be traced to this single factor. It has already been widely demonstrated that in the matter of new academic developments, the resistance to change was circumvented by students who voted with *their feet* in their preference for new options, whether these be archaeology, opto-electronics, immunology, or marketing-with-everything. The proposal that the funding of universities should be based on the earned income from their student customers is the most radical of changes foreshadowed here.

Details of various student-funded schemes of financing universities have been published and discussed widely. The British Committee of Vice-Chancellors and Principals published a position paper* describing the case for change and the mechanics of distributing student bursaries to provide for university incomes initially not too different from their present incomes. The main financial differences between the old and the new arrangements are twofold. Firstly, in placing the responsibility on the student customers, the way is open to surcharging students who could and would pay something towards the cost of their courses, thus providing new income for the universities. Secondly, in putting the government at arms-length from the universities, it better guarantees their freedom and, by linking the students directly to the government, their political leverage on governments seeking to economize and to otherwise damage the system is greatly increased.

* Occasional paper (1993). Committee of Vice-Chancellors and Principals. 29 Tavistock Square. London WC1H 9EZ. UK.

Of course, the main beneficiaries, namely the universities, will resist the change to student-customer status. The older the university the greater its traditions and the more likely it is to cling to its old ways. To ask professors to change the habits of a lifetime is asking a lot, and it is probable that only the combination of the prospect of higher incomes with the newer, easier teaching and learning methods would be attractive enough for them to consider being retrained for the new demands. It is more likely that some of the smaller, new universities, for instance, those in the new Russian Federation, will see the benefits of a new start. But as soon as the rewards of change are evident then others will quickly follow suit. That is the pattern of all change, that it always occurs by a sequence of sudden, generally small but always sudden changes.

Governments will also resist, even those of the radical right which are intellectually persuaded that governments have no business to be directing universities and no capability of doing so. Governments big and small like to govern, as do their civil servants. It is possible that this impasse will only be overcome by the privatization route. It is the American system of plurality, *i.e.*, the mixture of public and private funding, that has given that country the greatest variety of universities and conceivably also the greatest universities.

In this context, it is worth noting that over millennia, universities have stood for independence and freedom. It is probably their greatest long-term asset and their greatest attraction to the young. In times of oppression, the first act of tyrannical government is to close the universities. Whilst therefore universities have no monopoly of need or regard for freedom and independence, it is vital they have it and that it is politic, as it is for the BBC and other broadcasters, to be at arms length from government. That freedom, however, is most easily proscribed by those who control the purse strings. *He who pays the piper calls the tune*, runs the old saying and it was ever thus. Universities can never be sure of their independence and freedom whilst they are directly dependent on government and other state bodies for their mainstream income.

Much research has gone into the question of the best way of optimizing university freedom, student subsidy, government grants, and parallel con-

tributions. Among the most prominent is that which guarantees every student accepted into undergraduate status a scholarship or bursary the cash value of which pays for at least 75% of the actual cost of his or her course as indicated by the fee he or she must pay. The difficulty of students in meeting the remaining 25, 20, or 10% (depending on the degree of generosity of the subsidy) is ameliorated by a repay-as-you-earn loans scheme.

Many students, especially those in Europe, will take badly to the idea of paying anything for their higher education. They will claim that higher education should be free, that is, a right, notwithstanding that it is available to only a privileged minority. They will deny it is a privilege but will resist its dilution even if that is clearly to the benefit of those potential undergraduates at present excluded on the grounds of total cost. They are, however, idealists at heart, and they can be sold the new arrangements if they are put forward not as an economy measure but as a democratic means for widening access, enhancing choice, and improving provision. It will not be easy but it must be done.

Finally, these proposals for improving the funding of universities relate only to tuition fees. As noted above, the question of student maintenance is a separate matter but nevertheless important to many students. Students should be able to avail themselves of the social benefits open to all citizens. To this end, there will always need to be a not-ungenerous system of loans, also on the repay-as-you-earn basis and with discounts for early repayment.

In summary, there can be no satisfactory basis for the academic future of the universities unless their financial futures are also secure and based on sensible, transparent rules. The real benefit, however, of financial security is the independence it confers on the universities. Their protection, even from the fact that the government is still meeting the greater part of their costs, albeit indirectly, lies in the political leverage exercised by many millions of students and their relatives if the government should attempt to exceed its authority or arbitrarily to reduce its support.

This benefit is only slightly greater than that of the widespread choice also made possible by the portability of the student bursaries (to be taken anywhere) and by the instantaneous effect of their choices between good and bad universities, good and bad teachers, good and bad subjects. The new funding proposals will not settle all issues, only most of them.

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